

a BET surface area of 20 to 70 m²/g.

Claim 12 (currently amended): The catalyst according to claim 5 wherein said alumina support ~~is of~~ comprises shaped transition alumina having an apparent bulk density of between 0.7-0.8 g/cm³ and having mixed crystalline forms of α , κ , θ , δ , ρ , η , γ , and χ

REMARKS

Claims 1-12 remain in the application. Claims 1, 5, 9 and 12 had been objected to because of several informalities which have been corrected as the examiner had suggested except claim 12 wherein the phrase "is of" has been replaced by "comprises" for clarity. The substitution of "on" for "of" in claim 12 was not appropriate. In addition the omitted term "component" has been added to clarify the phrase "or a Group 8 metal".

Claims 1-12 had been rejected under 35 USC § 112 second paragraph for several informalities which have been corrected by the above amendment.

Claims 1-7 and 9-12 had been rejected under 35 USC § 102 (e) as being anticipated by Frenzel, U.S. patent 6,350,717B1. Applicant respectfully traverses the rejection.

Rejections under Section 102 are proper only when the claimed subject matter is identically disclosed or described in the prior art. See *In re Arkley et al.*, 172 USPQ 524(CCPA 1972). A rejection under 35 USC 102(e) for anticipation necessarily implies that the invention sought to be patented is not new, i.e., that there are no differences

between what is claimed and what is disclosed in the prior art. See *In re Kalm*, 154 USPQ 10 (CCPA 1967). The cited art quite clearly does not disclose that which the examiner urges in the Office Action that it does disclose. Further the test that determines whether the reference is anticipatory or not is whether the reference contains an enabling disclosure. See *In re Hoeksema*, 158 USPQ 596 (CCPA 1968). As pointed out hereinabove, this reference does not contain enabling disclosure since it is not directed to the same invention. All disclosures in a reference must be evaluated for what they fairly teach one of ordinary skill in the art. See *In re Unbricht*, 160 USPQ 15 (CCPA 1968). Hence when one considers the specific disclosure of the prior art the case which the examiner urges for anticipation is completely destroyed.

Frenzel discloses that its catalyst must have "at least one" element from its group 10 (nickel, palladium or platinum) and "at least one" element from its group 11 (copper, silver and gold). The term "at least one" is not a disclosure of more than one, it merely does not preclude another metal from the group in question. The present claims **require**:

Pd and at least **2** metals selected from Ag, Zn or Bi

or

Pd and **one other Group 8 metal** and at least **2** metals selected from Ag, Zn or Bi

Frenzel **requires** only at least one New Group 10 metal(Ni, Pd, Pt) and one New

Group 11 metal(Cu, Ag, Au). The required metals of Frenzel do not include either Zn or Bi (at least one of must be present in addition to Ag for the present invention), thus the compositions as disclosed by Frenzel cannot be the same as the present invention.

The fact that Frenzel discloses that other elements **may be** added to the catalysts fails to create a 102 disclosure and in the absence of suggestion that these other elements are essential or should be added for a selective hydrogenation catalyst, that very general disclosure does not sufficient to support obviousness. Thus it should be noted that the Frenzel disclosure prefers only one metal from each of its 2 groups and does not enable one of ordinary skill to practice the invention as claimed (i.e., no enabling disclosure).

With regard to claim 12, the examiner's statement about the apparent bulk density is in error. The bulk density is a function of the shape of the support as well as the properties of the alumina. The shape (not claimed) which applicant's discloses is spherical while the catalyst of Frenzel is extruded -- which may be many long shapes (lobed, cylindrical, etc) but not spherical.

Thus, applicant's claims are not anticipated by Frenzel. A reference, to be anticipatory under § 102, must meet every critical element of the claim at issue. That is, each element of a claim under consideration must be found in a single prior art reference. *Lindemann Maschinenfabrik, GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984).

Because Frenzel does not teach multiple elements from his group 10 and 11 and

further specifically teaches only one, the reference cannot make the instant claims obvious under 35 USC § 103. The CAFC in *In re Gurley*, 31 USPQ2d 1130 (Fed. Cir. 1994) has summarized the "teaching away" line of reasoning. Therein at page 1131 the court held that "a reference will teach away if it suggests that the line of development flowing from the reference's disclosure is unlikely to be productive of the result sought by the applicant."

Further, it is a well known patent law concept, that catalysis is not predictable. See *Ex parte Levine, et al.*, 41 USPQ 411 (Bd. App. 1939); *Ex parte Berger, et al.*, 108 USPQ 236 (Bd. App. 1953), *In re Doumani, et al.*, 126 USPQ 408 (CCPA 1960).

The reasoning that elements are in the same Periodic Table group and thus obvious has been specifically rejected by the CAFC in *In re Grasselli and Hardman*, 218 USPQ 769 (Fed. Cir. 1983) wherein the Court held:

"...,the known relationship of lithium, cesium, rubidium and francium to sodium and potassium, as Group IA elements, is not sufficient, in and of itself, to treat them as interchangeable in catalyst compositions."
[emphasis by Court].

Thus the claims are not obvious over Franzel.

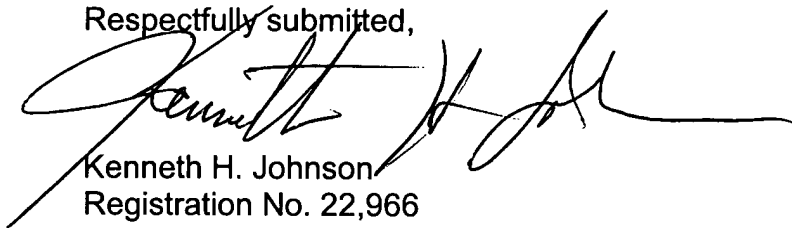
Claim 8 had been rejected under 35 USC § 103 as being obvious over Frenzel in view of Brown U.S. patent 6,127,310. The only additional disclosure of Brown is that bismuth may be an enhance the performance of a palladium catalyst, not just any hydrogenation catalyst as the examiner has proposed. The catalyst of Brown is specific and the use of bismuth is specific to that catalyst, which on consideration of the entire disclosure is a catalyst in which Pd is the primary active ingredient. As outlined above,

the law has long recognized that catalysis is unpredictable. One cannot merely plug one element in for another or one "enhancer" from one catalyst in another and achieve predictable results.

Thus, the broadest teaching of the disclosures of the applied art, individually or combined, are a supported palladium-silver catalyst with perhaps a promoter and a second catalyst which comprises palladium enhanced by bismuth. This does not anticipate or make obvious the claimed catalyst.

Applicant respectfully requests reconsideration, withdrawal of the restriction requirement, rejoinder of the non elected invention and early allowance of the claims.

Respectfully submitted,



Kenneth H. Johnson
Registration No. 22,966
Attorney for applicants
P.O. Box 630708
Houston, Texas 77263
Telephone: 713-780-7047
Fax: 713-780 7671

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to:

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on 06/11/03

